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ALASKA FOREST RESEARCH CENTER

U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

ROCKY MOUNTAIN STATION

No. 19

JUNEAU, ALASKA

Seasonal Distribution of Leader Growth

First year data from the Ketchikan area of the Tongass National Forest showed that leader growth of Sitka spruce and western hemlock saplings began about May 15. Leader growth of spruce terminated about August 1 and hemlock about September 15. Slightly over half of the total spruce leader growth was made during the three weeks of June 13 to July 3 with the greatest weekly growth (19 percent of the total) occurring between June 19 and 26. Ninety percent of the spruce leader growth was completed in the seven weeks from May 30 to July 17.

Hemlock's greatest weekly leader growth (14 percent of the total) was made between July 10 and 17, three weeks later than that of spruce. Fifty-eight percent of the hemlock leader growth occurred between June 27 and July 30. Ninety percent was completed in the ten weeks from June 13 to August 20.

Individual trees varied in their weekly growth rates without apparent reason, but the seasonal totals were similar. After the peak period, weekly growth decreased at about the same rate as it had increased though hemlock tended to fall off at a slightly faster rate. Table 1 summarizes the results. The first measurements were taken on May 23 when the terminal buds were partially open.

March 1953

R. M. Godman

Table 1.--Weekly leader growth and cumulative percentage by species.

Week ending	Sitka spruce ^{1/}		Hemlock ^{1/}		Cumulative growth percent	
	Growth ^{2/}	Percent	Growth ^{2/}	Percent	Spruce	Hemlock
May 23	--	--	--	--	--	--
" 29	.04	3.79	.02	1.80	3.79	1.80
June 5	.05	4.74	.02	1.80	8.53	3.60
" 12	.13½	12.80	.03½	3.16	21.33	6.76
" 19	.16½	15.64	.05½	4.95	36.97	11.71
" 26	.20	18.95	.11	9.91	55.92	21.62
July 3	.17½	16.59	.12	10.81	72.51	32.43
" 10	.12½	11.85	.12½	11.26	84.36	43.69
" 17	.13½	12.80	.15½	13.97	97.16	57.66
" 24	.02	1.89	.14	12.61	99.05	70.27
" 30	.01	0.95	.10½	9.46	100.00	79.73
Aug. 6	.00	.00	.09½	8.56	100.00	88.29
" 13	.00	.00	.06½	5.85	100.00	94.14
" 20	.00	.00	.03	2.71	100.00	96.85
" 27	.00	.00	.01½	1.35	100.00	98.20
Sept. 2	.00	.00	.01½	1.35	100.00	99.55
" 10	.00	.00	.00½	.45	100.00	100.00
" 17	<u>.00</u>	.00	<u>.00</u>	.00	100.00	100.00
Total	1.05½		1.11			

^{1/} Average of 4 spruce and 6 hemlock.

^{2/} Growth in hundredths of feet.